

## COMMENTARY

## Unregulated potions still cause mercury poisoning

The toxicity of inorganic mercury, known as the mercuric or mercurous form, has been recognized for centuries. Roman historians noted that men working in Spanish cinnabar mines, rich in red mercuric sulfide, developed tremors, mental deterioration, and ataxia. The idea for Lewis Carroll's mad hatter in *Alice in Wonderland* came from his knowledge of the neural toxicity of mercuric nitrate, which was used in the fur industry to make felt.

Mercurous compounds became the most common form of mercury used in medicinal preparations. They are often regarded as safe and nontoxic, reflected in the innocent names of the preparations, which suggest gentleness and beauty: sweet sublimate, mercurous dulcis, and calomel (from *calos*, meaning "good," and *melas*, "black"). Calomel, or mercurous chloride, probably originated in China and was used by Paracelsian physicians in the 16th century. It was used to treat malaria and yellow fever, and a preparation called "worm chocolate" or "worm candy" was given to patients infested with helminths.<sup>1</sup>

Toxic effects were soon noticed in individuals given large doses for long periods, in whom excessive salivation, gum inflammation, loosening of the teeth, gastrointestinal upset, and an ashen appearance developed. They had troubling neurologic symptoms, such as arm and facial tremors, hyporeflexia, weakness, ataxia, and erethism—unusual timidity and personality change. In 1825, a poem appeared in a Virginia publication warning physicians of the dangers of calomel: "Since Calomel's become their boast,/How many patients have they lost,/How many thousands they make ill,/Of poison, with their calomel."<sup>2</sup>(p253)

Some physicians became alarmed by the toxicity of mercury-containing medicines.<sup>1</sup> In 1822, Samuel Thomson declared that,

the practice of giving poison as medicine, which is so common among the medical faculty at the present day, is of the utmost importance to the public. . . and [I] enforce in the strongest manner on their minds the pernicious consequences that have happened and are daily taking place by reason of giving mercury, arsenic, and other deadly poisons to cure diseases.<sup>3</sup>

The toxic potential of calomel was highlighted in 1948. A Cincinnati pediatrician discovered that a common infantile and childhood illness called acrodynia or "pink disease" was caused by the widespread use of calomel in treating childhood teething and constipation.<sup>4</sup> As late as 1950, acrodynia accounted for more than 3% of admis-

sions to children's wards in London hospitals. Official statistics record that 585 children died of pink disease between 1939 and 1948 in England and Wales.

Because of the recognition of mercury's toxicity, compounds containing mercury have been banned from almost all regulated drugs and over-the-counter preparations in the United States and many other countries. But mercury still appears in unregulated potions, as shown by Weldon and colleagues' study.

The authors report a series of patients in whom elevated urinary concentrations of mercury developed, and they had symptoms suggestive of inorganic mercury poisoning, such as tremor and paresthesia. The women had used a cream containing calomel for a prolonged period, and enough mercury had become systemically absorbed to produce a marked rise in urine mercury. Women usually bought the cream in Mexico, although one fifth had obtained it in the United States at flea markets or health shops. Such beauty creams are available worldwide and have been associated with renal and peripheral nerve damage.

Other unregulated potions containing mercury are available in the United States. Kang-Yum and Oransky report the cases of 3 patients who developed inorganic mercury poisoning from Chinese herbal and patent medicines taken orally or as salves.<sup>5</sup> Their article includes a table listing 18 different Chinese patent medicines that contain mercurials.

Physicians should think of mercury intoxication in all patients with unexplained neurologic or cognitive symptoms. Patients who have had access to unregulated products, from either the United States or elsewhere, are most at risk. If the diagnosis is suspected, the patient's mercury levels should be measured and then the suspected product analyzed.

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